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I, LEANNE MYNOTT, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. PP 9446 for a patent by B.T.B.H. HOLDINGS LIMITED filed on 26 March 1999.



WITNESS my hand this  
Tenth day of April 2000

LEANNE MYNOTT  
TEAM LEADER EXAMINATION  
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**PROVISIONAL SPECIFICATION**

Invention Title: **A Display System**

The invention is described in the following statement:

## A DISPLAY SYSTEM

### **Field of the Invention**

This invention relates to a display system and refers particularly, though not exclusively, to illuminated display boards.

### **5 Reference to related patent**

This invention is an improvement in the invention disclosed and defined in Australian patent 647834 (AU-B-86226/91), the contents of which are hereby incorporated by reference. Throughout this specification Australian patent 647834 is referred to as the "earlier patent".

### **10 Background to the Invention**

In the earlier patent there is disclosed an illuminated display system including a transparent medium having two opposing surfaces to be illuminated. The illumination is from the lower-most edge of the transparent medium. Both surfaces to be illuminated have a matrix of dots substantially covering the 15 surfaces, resulting in an increased illumination of the surfaces.

The results using the invention of the earlier patent are an improvement over the known art, but further improvement is possible. Furthermore, it involves the cost and task of printing the matrix on both surfaces.

In the earlier patent "dots" are defined as being of any size or shape; and 20 are transparent or opaque and more preferably light coloured, for example, white.

"Matrix" is defined in the earlier patent as any display or array of dots; and "transparent medium" is defined as being one or more transparent sheets, which may be glass or, preferably, acrylic.

It is therefore the principal object of the present invention to provide an

illuminated display system having improved performance over that disclosed in the earlier patent.

### **Definitions**

Throughout this specification the reference to "spots" is to be limited to  
5 spots of any shape (eg. circular, illiptoid, polygonal trapezoidal, or irregular) with a hollow, transparent interior. An example of this is an annulus.

"Matrix" throughout this specification is defined as any display or array of spots.

"Transparent medium" throughout this specification is limited to being one  
10 or more transparent sheets, which may be glass or, preferably, acrylic.

### **Brief description of the Invention**

With the above and other objects in mind, the present invention provides an illuminated display system having a transparent medium with first and second opposing surfaces to be illuminated, wherein at least one of the first and second  
15 opposing surfaces has a matrix of spots substantially covering the entire surface to be illuminated for providing an even and increased illumination throughout the first and second surfaces, the matrix of spots not forming a or part of a message or information to be illuminated; and wherein the spots are in the form as defined herein.

20 Preferably, the hollow interior of each spot is of a shape corresponding to the outer periphery of the spot. Alternatively, the hollow interior may be of a shape different to the other periphery of the spot.

Advantageously, the spots are translucent, more preferably white.  
Advantageously, only one of the first and second surfaces has the matrix of spots  
25 thereon. Alternatively, both the first and second surfaces may have the matrix of

spots thereon.

### Description of the preferred embodiment

In the earlier patent the dots defined and referred to therein are solid. This is due to the way in which the specification describes and illustrates those dots.

- 5 Furthermore, the dictionary definitions of "dot" is such as to inherently make them solid. It has been realised that by having the spots of the present invention, light can pass not only around the edge of each spot, but through the hollow interior of each spot, and the edge of each hollow interior. In passing each edge, there is a refraction, or bending, of the light. It is this refraction or bending of light which is
- 10 the cause of the devices of the earlier patent being able to work. By having a spot as defined herein rather than a dot of the earlier patent the increase in linear edge available to the light is significantly increased. This therefore increases light transmission, and light refraction.

It has therefore been found that by using the spots of the present invention  
15 there is an increase in illumination. The table below compares that of the present invention with that of the earlier patent.

### Comparison of lux readings

Earlier patent

Present Invention

Light Source

1500mm	1	148	153	1200mm
" "	<u>2</u>	154	165	
" "	<u>3</u>	103	147	
" "	<u>4</u>	85	134	
" "	<u>5</u>	93	128	
" "	<u>6</u>	129	139	
" "	<u>7</u>	134	130	

Light Source

- It is to be realised with the earlier patent the matrix is printed on both surfaces. With the present invention the matrix was printed on a single surface.
- 5 From this it can be seen that improved illumination has resulted in all except the final reading. Therefore, in six out of the seven readings the illumination was improved. This is despite the printing of the spots of the present invention being on one surface only.

Whilst there has been described in the foregoing description a preferred embodiment of the present invention, it will be understood that many variations or modifications in details of design or construction may be made without departing from the essential features of the present invention.

5 It will be understood that the invention disclosed and defined in this specification extends to all alternative combinations of two or more of the individual features mentioned or evident from the text or drawings. All of these different combinations constitute various alternative aspects of the invention.

It will also be understood that the term "comprises" (or its grammatical  
10 variants) as used in this specification is equivalent to the term "includes" and should not be taken as excluding the presence of other elements or features.

B.T.B.H. Holdings Limited

By their Registered Patent Attorneys

**Freehills Patent Attorneys**

26 March, 1999

